DOCUMENT RESUME

ED 215 105 CE 031 730

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TITLE Organization and Operation of Kentucky's Vocational Education Learning Centers. Final Report.
INSTITUTION Kentucky Univ., Lexington. Div. of Vocational Education.
SPONS AGENCY Kentucky State Dept. of Education, Frankfort. Bureau of Vocational Education.
PUB DATE 81
NOTE 55p.; For a related document see CE 031 731.

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS Audiovisual Instruction; Educational Objectives; Educational Philosophy; Educational Practices; Guides; *Individualized Instruction; Job Training; *Learning Laboratories; Material Development; Models; Postsecondary Education; Program Descriptions; *Program Development; *Program Effectiveness; Program Implementation; Secondary Education; *State Programs; Student Evaluation; Tutoring; Two Year Colleges; *Vocational Education; Workshops
IDENTIFIERS *Kentucky

ABSTRACT

A project was undertaken to develop a model for organizing and operating learning centers in secondary and postsecondary vocational schools as well as in community colleges in Kentucky. During the first year of the project models were developed for learning centers at both instructional levels. Stressed in each model was the use of key elements of individualized instruction, including diagnosis, prescription, instruction, and evaluation. The instructional phase of the secondary/postsecondary vocational learning center model included specific developmental programs for the prevocation student and for full-time vocational students as well as a developmental program available to members of the community on a walk-in basis. Among those instructional options available at the community college learning centers were guided individualized independent study, development courses, adjunct courses, learning strategy workshops, and peer and faculty tutoring. Second year project activities included production of a learning center handbook, assessment of students participating in the program, and study of allocation of time at the various centers. While the centers were originally found not to be operating in a manner totally consistent with the program models, the discrepencies in operation were identified and addressed. (The related learning center handbook is available separately--see note.) (MN)

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ORGANIZATION AND OPERATION OF KENTUCKY'S VOCATIONAL EDUCATION LEARNING CENTERS

Final Report

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Project Number: V288DE023F

1981

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COMMONWEALTH OF KENTUCKY
STATE DEPARTMENT OF EDUCATION
BUREAU OF VOCATIONAL EDUCATION

CE 031 730

ACKNOWLEDGEMENTS

The assistance of several people contributed to the completion of this project report.

The cooperation and involvement of learning center coordinators from Kentucky schools are recognized. These coordinators, whose names are listed in Appendix A, assisted in the project and were directly involved in developing many of the ideas and materials in this report and Handbook.

A special thanks is extended to Kentucky's Special Vocational Director, Donnalie Stratton, and to Lou Perry, of the Research Coordinating Unit, for their assistance.

Of particular value to this project, were the efforts of Dr. John Phillips, IMTS Project Director, University of West Florida. Dr. Phillips presented an inservice program for the project participants, as well as fielding numerous phone calls and letters, and providing information and materials. He also arranged for four Kentuckians to participate in IMTS training sessions in Florida.

Over the two-year duration of this project, two graduate assistants provided invaluable assistance. These individuals were Mrs. Charlotte Tulloch and Mrs. Sally Henry. Their dedicated efforts were sincerely appreciated.

Special appreciation is reserved for Mrs. Anne Mills, project secretary, and to Charlotte Jernigan, Handbook typist.

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CHAPTER 1

INTRODUCTION

Throughout Kentucky, as is true nationwide, educators in secondary and post-secondary vocational schools and community colleges have found that students enroll in programs at these schools without the basic academic skills needed for success. To answer this need, learning centers have been established in many schools.

These learning centers operate under various names: learning center, learning resource center developmental education program, learning skills center, learning lab, and so on. Their major purpose, regardless of name, is to help students improve the basic academic skills necessary for successful program completion.

Learning centers are operated in various ways. In some learning centers, most instruction is based on a group approach, such as offering a class in math brush-up. Others operate on an individual basis, using various types of programmed instruction. Some depend on tutoring. Some centers are heavily involved in GED instruction and testing. Most learning centers in Kentucky seem to have developed a combination of operational modes.

It was felt that there existed a need for development of a model for learning center organization in the Kentucky vocational schools. Such a learning center model could demonstrate new ideas and could be a training center for learning center staff from other centers across the Commonwealth. This project was designed to contribute toward the development of such a model.

During the first phase of this project, FY 1980, nine learning center coordinators met on a regular basis to develop a proposed model for learning center operation. Additionally, materials and equipment needs were analyzed and recommendations made regarding minimum center needs. As a result of these efforts, funds were made available to these cooperating learning centers during FY 1981. These funds were to be used for learning center improvement and demonstration in accordance with the needs identified through the 1980 project activities.

More specifically, the objectives of this project were:

1. Coordination of program improvement activities in cooperating learning centers
2. Development of a Learning Center Handbook

This report includes a brief, background review of the development of learning centers, a description of the procedures followed in developing a model, and a description of a model learning center at the secondary and post-secondary level, as well as at the community college level. The use of individualized instruction in learning centers is discussed, followed by a brief description of one delivery system for individualized instruction; the Florida Individualized Manpower Training System. A summary and recommendations for Kentucky learning centers conclude the body of the report.

Much of the substance of the model is reflected, however, not only in the body of this report, but in the Learning Center Handbook which is attached as an appendix to this report. There one can find specific information that can be used in setting up and operating a learning center. Such information includes suggestions for staffing and facilities, lists

of suggested furnishings and AV equipment, and a compilation of instructional materials in the areas of arithmetic, reading, and language. These materials comprise a large portion of this report, and it is hoped they will serve as a useful reference to learning center coordinators.

Review of Literature

Responsibility for helping students overcome weaknesses in academic background has been a part of the American college scene for almost a century. The first course in remediation for academic weaknesses was introduced in 1894 at Wellesley College (Cross, 1976). Since that time, remedial or developmental education has changed in form and has also changed somewhat in philosophy. The basic idea remains, however: helping students to further develop or upgrade basic academic skills so that they may function in some chosen program.

Learning centers in post-secondary schools and colleges have become a major vehicle for delivering such remedial or development education. They take various forms. They operate in diverse manners. They may be boilerroom operations or fully-funded, technologically sophisticated classrooms. To better understand current operation of learning centers, one must understand something about what it is they deliver: that is, remedial or developmental education.

The term "remedial" and "developmental" have been used differently by various educators. Some use the terms interchangeably. Cross suggests that a program is remedial if its purpose is to overcome academic weakness. If "the purpose of the program is to develop the diverse talents of

students, whether academic or not," she terms it developmental (Cross, 1976, p. 31). This expands such programs to the development of talents and strengths as well as the correction of weaknesses. Developmental education includes remedial education as a part, but not the whole.

Rouche and Wheeler (1973) suggest that remedial programs remedy deficiencies in order to allow a student to enter a program for which he was otherwise ineligible. Developmental programs refer to developing skills and attitudes which may not relate to making a student elibible for another program. Modified curriculum and mastery learning are sometimes considered "developmental."

Over the years and for various reasons, colleges and universities have found some students unready to tackle regular college work. To compensate, schools often provided study skills courses. Some offered "remedial classes" in math, writing and reading, and so on. The tremendous expansion of students in the postwar years contributed to the growth of remediation as the institutions "sought to assure themselves and their publics that students attending the school were making good use of their opportunity" (Cross, 1976, p. 28).

Open admission came into being in the 1960's. A high school diploma assured students of admission into a state school. The problem then changed from "getting in" to "staying in." Students who previously would have been eliminated from admission to post secondary education now had to be admitted--and they came in staggering numbers. Rouche (1968) presents figures to illustrate the unpreparedness of many of these students.

For example, almost 70 percent of the freshmen enrolling in California community colleges in 1965 failed to qualify for English 1A. Teachers at Bakersfield College found they had to begin at about fifth-grade level in building academic skills. "Informed sources estimated that, nationally, about half of the students in two-year colleges required remediation in reading in order to prepare them for college work" (Cross, 1976, p. 28).

Greenville TEC estimated that about one-tenth of its students require remedial study in language, math, and reading before entering the college's technical, professional and two-year liberal arts programs (Carr and Baker, p. 16).

To meet this need remedial courses proliferated, and not just in the colleges and universities. The growing numbers of vocational/technical schools and community colleges found the same problems and sought to meet them with additional remedial programs.

Due to the growth of educational technology plus the admission of large numbers of students (Maxwell, 1979), learning centers have developed as one means of providing the necessary remedial programs. They are varied in operation, as well as in purpose. They are found in almost every level of post secondary education from technical schools to professional schools.

Enright (1975, p. 81) defines a learning assistance center as a "place concerned with learning environments functioning to enable students to learn more in less time and with greater ease, offering tutorial help, study aids

in content fields, serving as a testing ground for innovative machines, materials and programs, and acting as a campus ombudsman."

Peterson (no date) defines learning centers in terms of components they should possess: traditional library services, audio visual services, instructional development to meet individual needs, and promotion of innovative learning environments as appropriate to a number of levels of learning.

The Committee on Learning Skill Centers (1976) describes learning centers as a special location where students can receive special instruction not usually included in regular classes.

The New England Association of Academic Support Personnel (1977) describes learning centers as places of varying sizes where students can find staff and materials to help them with specific problems.

The Flint Hills Area Vocational-Technical School (1977) describes their learning skills center as a place which offers "additional basic instruction in those skills actually necessary for success in the student's chosen vocation. In addition, the skills center offers alternate methods of learning, via multimedia aids."

"The primary functions of the skills center are to identify students with possible basic skills handicaps, to locate specific basic skills deficiencies, and to provide remedial instruction leading to student success in the regular program. It is the further responsibility of the center to provide relevant material to the faculty and students whenever possible and to develop such material if necessary" (Messenger, 1977).

Whatever the definition, Maxwell (1979, p. 105) considers learning centers to be "the latest development in a long series of attempts to help students adjust" to the academic demands of the educational setting. As an example of

success in such adjustment, a study of Kansas learning centers cites improvement of academic skills, namely reading. Students in vocational schools which have learning skills centers showed two times as much improvement in reading skills as students in a vocational school with no learning skills center (Crowl, 1976).

Learning centers function in a number of styles. Many of them operate in line with Bloom's (1971) theory of learning for mastery. This theory holds that given proper instruction and sufficient study time, more than 90 percent of our students can learn most of what our schools teach. Given this assumption, many learning centers take students not "making it" at traditional rates of classroom progress, and gear instruction to the pace of each individual. Thus, self-paced instruction, the backbone of many learning centers, has developed.

To illustrate learning center operation, selected programs are described below.

ELEVATE, is an individualized program designed to teach minimal math and communication skills to disadvantaged students in the Hartford Area Vocational Center. It does not specialize in teaching remedial reading or math. The coordinator identifies the student's problem areas. The student then works on materials directly related to his or her vocational area. If reading is the problem, the supplementary learning materials will be adapted from the student's own texts. The vocabulary taught will be that of machine-shop, cosmetology, or whatever the student is enrolled in. What the student learns in the learning center is immediately and directly applicable in the vocational classroom. The ELEVATE instructor may have previously-developed materials available, or may have to develop new ones. This program

involves close cooperation with vocational instructors both in recruitment and in program design.

Many learning centers use some form of diagnostic/prescriptive design. Christ (1971) describes a "cybernetic, student-oriented" learning-assistance center that has diagnostic testing, specific objectives, self-paced materials, and machine programs that are adjusted to each student's needs. Others have assembled, developed and adapted their own collection of tests and learning materials.

Many Florida schools have Learning Resource Centers (LRC) where students can correct reading and math deficiencies through diagnostic/prescriptive means. Students entering the LRC are tested. Tests are analyzed (diagnosed), and a study schedule of individualized programmed modules is developed from an extensive prescriptive catalog. The LRC is set up so that students can work through the modules on an individual basis, using study carrels and audio-visual equipment. Staff members are available for help. To successfully complete a module, a student must score at least 84 percent in a post test. Students scoring less than 84 percent return to the module for more study and tutorial help if necessary. Materials from a number of commercial vendors are used, including the Individualized Manpower Training System (IMTS) developed by the Technical Education Research Center, Montgomery, Alabama. Through the University of West Florida, Florida has adapted its own version of the IMTS, including the development and/or update of prescribing catalogs.

Some learning centers are geared primarily to preparing people for the high school equivalency exam. This may or may not be in conjunction with other educational programs. Transportation and child care may be considered an essential component of a program (Fletcher and Fawcett, 1978). Such a program in Lawrence, Kansas is designed to diagnose problems and prescribe self-paced instructional system. Materials are administered by peer teachers.

Central Piedmont Community College offers Advancement Studies courses. These courses are a developmental studies program for students who have not reached mastery level in math, communications skills, chemistry, and biology. A student may proceed through the course work at his or her own pace using individualized modules in a technologically sophisticated environment. Appropriate credit is given for course completion.

Some learning centers provide group as well as individualized instruction. The Flint Hills Area Vocational-Technical School in Emporia, Kansas provides individualized instruction when only a few students in a particular area need help. When entire classes are experiencing the same difficulty, the learning center staff works with the vocational instructor to assess, for example, the reading level of the group. The center staff develops or provides materials for each reading level group. In the case of severe reading problems by the whole group, the learning center staff may choose to rewrite a difficult text in a more appropriate reading level and develop supplementary visuals. Study skills may be taught (Messenger, 1977).

Some learning centers provide more then remedial work in basic skills. Greenville Technical College (South Carolina) provides an example of a developmental program. Using the Individualized Manpower Training (IMT) System, upgrading of basic skills is taught. Counseling services, including vocational and motivational guidance, as well as an orientation program and diagnostic testing are available "to assist students in overcoming negative or self-defeating patterns of behavior" (Carr and Baker, p. 17).

Project Procedure

Kentucky schools presently have learning centers functioning in many of the ways described previously. In some of them, learning center purposes

and procedures have been well designed by qualified staff. In others, learning center purposes have not been specified and implementation and staffing have not been adequately organized.

This project was an attempt to provide a model of an effective learning center. It is not meant to be a state-mandated plan. Rather, it is a description of what is felt to be an effective learning center as defined by the literature and by learning center coordinators. It is hoped that Kentucky learning center planners and coordinators will examine the model closely, drawing from it those parts most useful to the individual programs.

Year One

The learning center project began in the fall of 1979. Learning center coordinators across Kentucky were contacted regarding their interest in participating in a spring series of workshop sessions on development of a learning center model. In January of 1980 a group of learning center coordinators met at the University of Kentucky to begin work on the model learning centers. Subsequently, four two-day sessions were held to continue the work. The sessions ran from 10:30 A.M. on the first day until approximately 3:00 P.M. on the second day. Much time was spent in group discussion as well as in small group work sessions. At one of the sessions, Dr. John Phillips of the University of West Florida presented material on the Florida use of the Individualized Manpower Training System. Additionally, four individuals from Kentucky were allowed to participate in three-day sessions on IMTS conducted by Dr. Phillips in Florida for new IMTS coordinators.

The final meetings of the learning center coordinators resulted in the development of a preliminary model for learning center operation. One model was developed for use in vocational schools; another was developed for use in community colleges.

Year Two

During the second year of the project, an attempt was made to implement the model in selected cooperating learning centers. However, before implementation could occur, it was necessary to assess the present status of learning center operation in these schools. Therefore, year-two procedures included:

1. An assessment of student characteristics
2. An assessment of present operating procedures, including how learning center coordinators budgeted their time among various job duties.

Data from these assessments were given to the cooperating learning centers as input to their development of local plans. A summary of the results of these assessments appears in Chapter 2, the Results section of this report.

Meetings continued to be held with the learning center coordinators during the second year of the project. At these sessions the coordinators reviewed materials and operating procedures for the purpose of refining the operation's model to the point that a Learning Center Handbook could be developed.

CHAPTER 2

RESULTS

Year One

As learning center coordinators worked to devise a useful model for learning centers in Kentucky, they found that while many similarities existed, there were also differences between learning centers in secondary and post-secondary vocational schools and those in community colleges. Therefore, two models were initially devised and are presented here: a model for learning centers in secondary and post-secondary vocational schools and a model for learning centers in community colleges. In each case, the coordinators attempted to express their ideas as to how learning centers should function rather than how they currently were functioning.

All possible functions of a learning center were not included. The coordinators focused on those functions they felt to be most important. NOTE: These models are presented to detail the outcomes of the first year of the project. However, the models were refined in the second year of the project and the results of this refinement appear in the appended learning Center Handbook.

A Model for Learning Centers in Kentucky Secondary and Post Secondary Vocational Schools

Statement of Philosophy

The role of the learning center is to provide academic assistance on various levels. Instruction focuses primarily on upgrading academic performance so that students may meet the demands of their vocational training course. The learning center encourages the development of employability and survival skills.

An atmosphere of encouragement in the learning center is crucial to student success. Students enroll voluntarily and are actively involved

in goal-setting. Individually prescribed programs are self-paced, thereby placing responsibility for progress on each participant. The academic needs of each student are met through the use of programmed materials and individualized instruction based on innovative teaching strategies for the non-traditional student. The learning center is success-oriented with a relaxed and informal atmosphere conducive to improving the student's self-image.

The learning center instructors should work closely with the program instructors in providing the best possible education for the students. This liaison should include development of program related materials and frequent consultation on the student's progress.

Another purpose of the comprehensive learning center is the initial and update training of professionals assigned to this area. Courses of study and facilities in institutions of higher learning may not include on-site training of learning center personnel, therefore, short intensive training sessions provided by experienced coordinators are valuable.

Operational Structure

The operation of learning centers in vocational education varies from school to school, depending on the type of school, the needs of students, the administrative structure of that school, the individual teacher, and many other factors. Some learning centers serve secondary vocational students, some serve post-secondary vocational students, and others serve community college students. In some schools all students are tested and those needing remediation are referred to the learning center. In other schools students are referred to the learning center primarily when an instructor feels the student needs special help in upgrading basic skills. Many learning centers accept "walk-in"

students.

The following diagram (Figure 1) is an attempt to conceptualize in a model a proposed structure for Kentucky secondary and post-secondary learning centers. It is a composite designed by several Kentucky learning center coordinators to express functions they feel should be conducted in a learning center. It expresses what should be, not what actually exists.

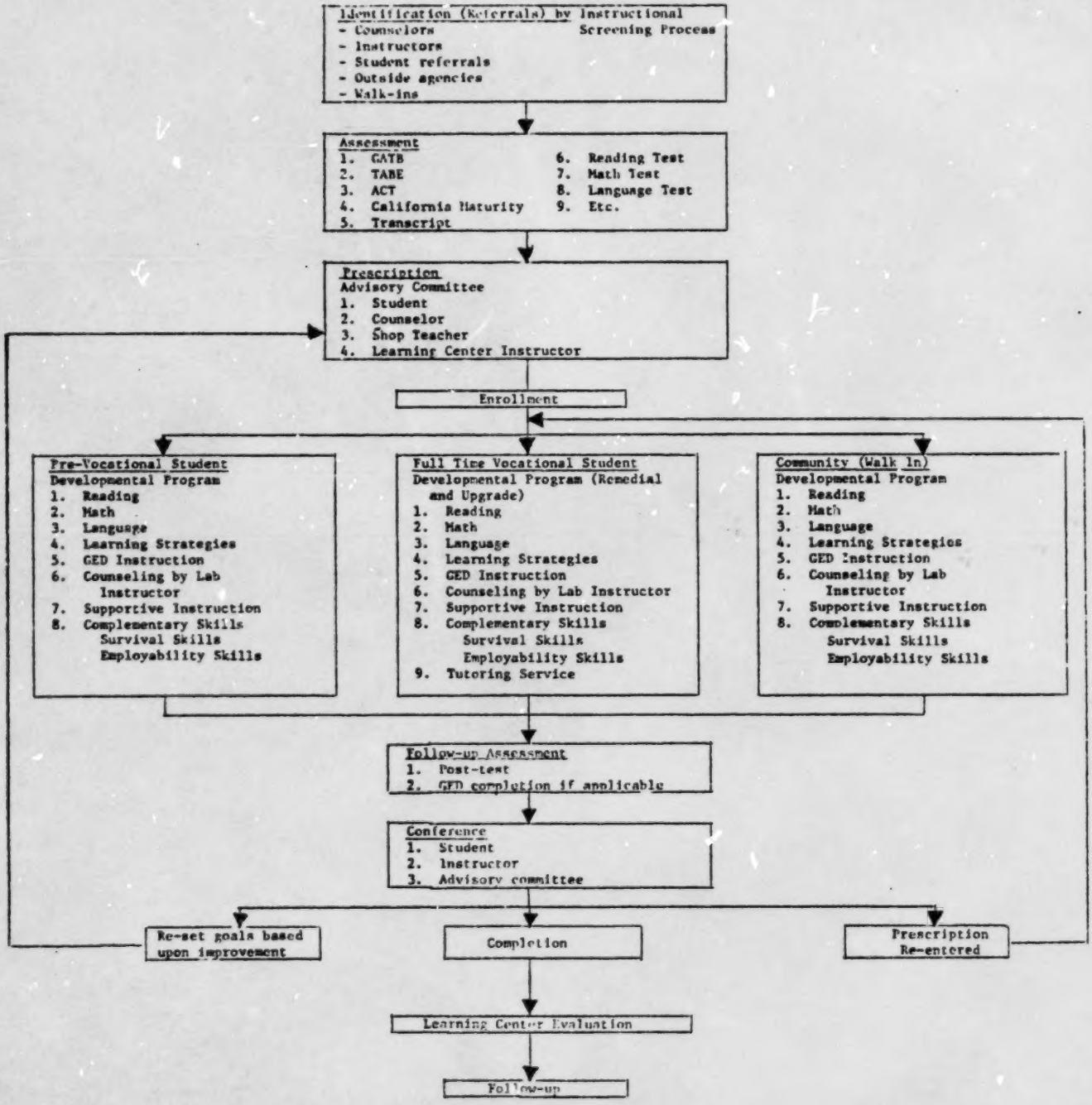
Referral: Entry into the learning center is by a prescribed, but flexible process. Students are identified and/or referred, with the two words being used interchangeably.

Based on the assumption that students will have been given some kind of screening upon class entry, the vocational school counselors will make referrals to the lab based on results of test scores which indicate developmental needs in specific areas. Shop instructors may identify problem areas based on the level of performance in certain areas and the apparent lack of some skills in order to complete an assigned task. Students themselves may be aware of their need for lab services and will so indicate.

Persons from other disciplines contribute to the instructional and screening process. Outside agencies such as the continuing education counselor with the Bureau of Social services, Comprehensive Care personnel, Manpower Services, Rehabilitation Services and other such agencies may identify a person as having a specific need which could be lessened or alleviated with the help from the Learning Center.

Persons may "walk in." This indicates that they are aware of their need for remediation or upgrading of specific academic skills usually with a specific goal in mind, such as job advancement.

Figure 1. Operational Structure: Secondary and Post Secondary Learning Centers



Assessment. After a student has been referred to the center, assessment on an individual basis by the lab personnel is done by several methods, depending on personal preference of the teacher. Some suggested tests are shown in Figure 1. The GATB is a test of general learning abilities, and various mechanical and manipulative skills. The TABE is a test of adult basic education, while the ACT is a college entrance test. Such scores can be useful in identifying specific areas of need. A transcript of grades will serve to identify possible problem academic areas. There are assorted tests concerned with individual academic areas which can be used with similar levels of achievement. A more general method of assessment is a conference period with the person which will indicate broad areas of instructional need.

Instructional Scheduling: In order to remediate or upgrade academics, an instructional plan, or prescription, is prepared for each student. An advisory committee is instrumental in developing the plan, this committee being made up of the student, the counselor, the vocational instructor, and the learning center coordinator. Students will complete the individual education plan to suit individual needs as dictated by the type of occupational program in which they are enrolled.

The first category of students is a pre-vocational student or that student who is preparing to enter a vocational training program. Their studies will be centered around reading, math, language, arts, study skills, GED instruction if needed, and academic counseling and/or guidance. Academic counseling by the lab instructor will be possible at any time. Full time vocational students will set up a more comprehensive program to include reading, math, language arts, study skills, GED instruction (if needed), supportive instruction which would be centered around program-related academics, survival skills which include such studies as income tax preparation, foods preparation, clothing,

child care, buying and selling, etc., and information on jobs, etc.

Counseling would be available for full time vocational students in conjunction with both the lab instructor and the school counselor.

In addition to regular studies and supportive studies, tutoring services would be available, often by persons in the school who are volunteering services, or outside agencies such as local services and facilities allow.

The learning center would serve "walk-in" students, those students interested in improving their academics, developing a better command of study skills and/or completion of a GED program whether for vocational training, a job, or personal improvement.

These three categories would not necessarily be part of the learning center program in every school, but could be.

Evaluation: Evaluation in each category would be by a post test of the learning center instructor's choice and/or the GED test, if applicable.

After testing, the student and other members of the advisory committee would review the progress chart which would include all pertinent data such as pre and post test scores. The student would then be advised to do one of three things. He might re-set his goals, based upon the observation that some progress had been made and that an update of the IEP and more time would render greater progress toward achieving the original goals. To re-set goals, the IEP would have to be revised to update materials and methods. The lab instructor and student could revise the IEP with or without the complete committee.

As a second option, the original IEP may be re-entered in order to provide more time for completion of the program, based upon performance, the indication being that goals will be successfully met, but at a slower pace than originally thought.

Thirdly, if all data indicate successful completion of the instructional scheduling in meeting the original goals, the student would be considered as having completed the program. In that case, the next step would be an evaluation by the learning center staff concerning materials, methods, placement, success in reaching goals, etc. This final evaluation would serve to determine the validity of learning centers.

Follow-up: Follow-up of students completing the scheduled instruction would be used to evaluate the effectiveness of the program. Such follow-up is useful in adjusting programs to more effectively meet student needs. Follow-up statistics also provide supporting evidence of effectiveness to administrators and the general public.

A Model For Learning Centers in Kentucky Community Colleges

Community college learning centers often operate in a somewhat different style from secondary and post-secondary vocational schools. A model for learning centers in community colleges is presented which illustrates some of their differences, while expressing similar principles.

Statement of Philosophy

The rationale for a learning center is based on several assumptions. First, all students in college today do not have effective reading, writing, mathematical, and study skills. Even students who make good grades often do so at an inefficient expense of time and effort. Also, students do not always perform as well as they could perform if they improved their learning strategies. Finally, learning strategies that students do use must be adapted for varying levels and disciplines. Many students have not had to perform some of the learning skills required for college work.

The learning center in the community college has as a primary goal the provision of academic assistance on various levels to help students develop reading, writing, mathematical, and study skills in order that they meet the demands of the college and benefit from their college experience. The emphasis in a community college learning center is on assisting students in passing courses, i.e., a pragmatic approach to learning assistance.

Although a pragmatic approach to "getting the student through college" is most important, techniques for dealing with the content must be taught apart from the context of immediate course demands. That is, the student must learn strategies for analyzing and synthesizing information and for showing he understands through a paper or test.

At the heart of this process is encouraging the student to use what he already knows. To that end, the atmosphere in a learning center must reflect acceptance of the student by being relaxed and informal. Skills competencies are, therefore, met in an unthreatening context of individualized, programmed, and small group instruction that provide for early success and improved student self-concept.

A second emphasis in the community college learning center is the involvement of faculty. This interaction between faculty from academic disciplines and learning center faculty is necessary if the students are to improve the learning skills for a particular academic course.

A final function of the comprehensive learning center is the training, both initial and update, of professionals in this area. Courses of study and lack of higher education facilities are limited for learning center professionals. The coordinator of the learning center must, therefore, be allowed time and funds for short intensive training sessions for in-house staff as well as for other community colleges in the system.

Organizational Structure

A learning center cannot be successful in fulfilling its role in the college without actually being a visible and clear part of the organization of the institution. Institutional support of the learning center is most effectively expressed by the placement of the learning center (or developmental studies program, academic support service, etc.) in the institutional organization structure (Figure 2).

The provision of support personnel is crucial to the operation of a learning center. The learning center needs secretarial support, as does any other discipline in the institution. Individualizing for the broad range of student abilities in this area also requires the support of an aide in each academic area for individual support to students and for the extensive record keeping that is necessary for efficient operation.

Operational Structure

Students enter the learning center through voluntary enrollment based on one of three recommendations: (1) referral from advisors, instructors, counselors, or community agencies; (2) placement or screening test results; and (3) self placement by the student himself (See Figure 3).

Introduction to the learning center should be a part of freshman orientation. Screening tests in writing, reading, and math are administered in a separately scheduled session prior to advising conferences. Results are forwarded to advisors along with guidelines for recommending enrollment in developmental courses. If developmental courses are recommended, they may be taken prior to or concurrent with courses in degree programs. Prior instruction is recommended for students who do not need a "brush up" but who lack skills prerequisite to success in those programs.

Figure 2. Organizational Structure: Community College Learning Centers

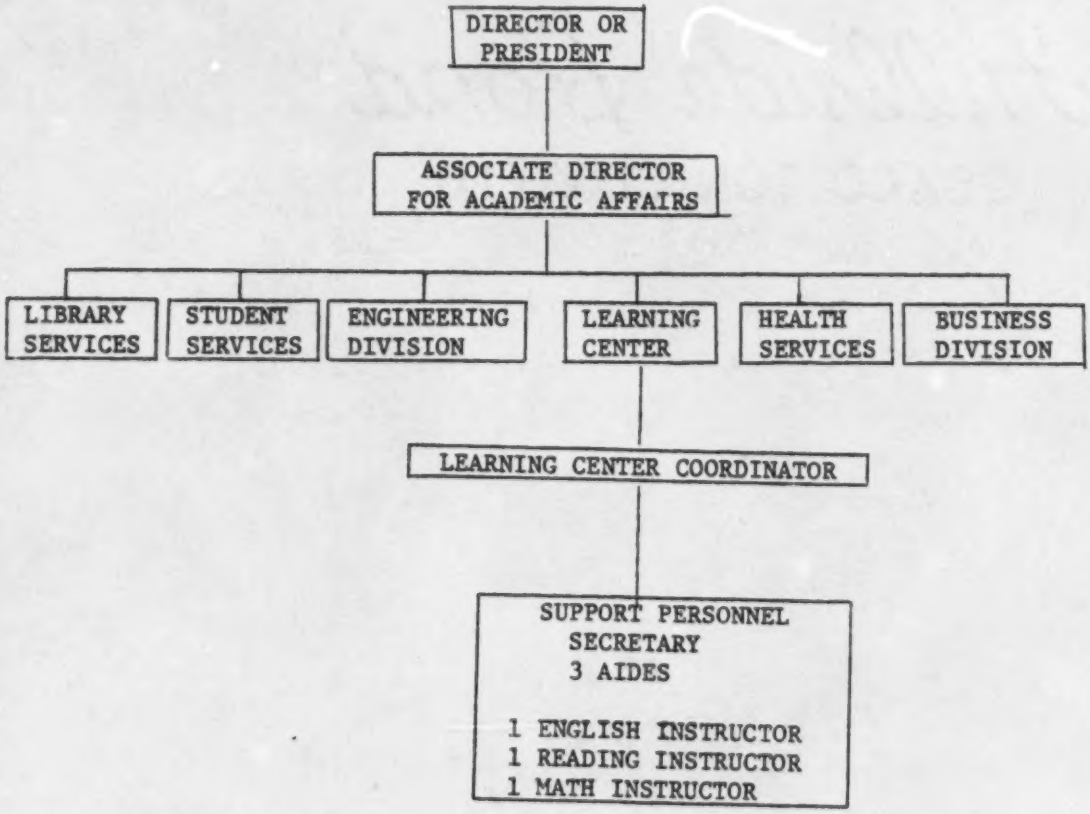
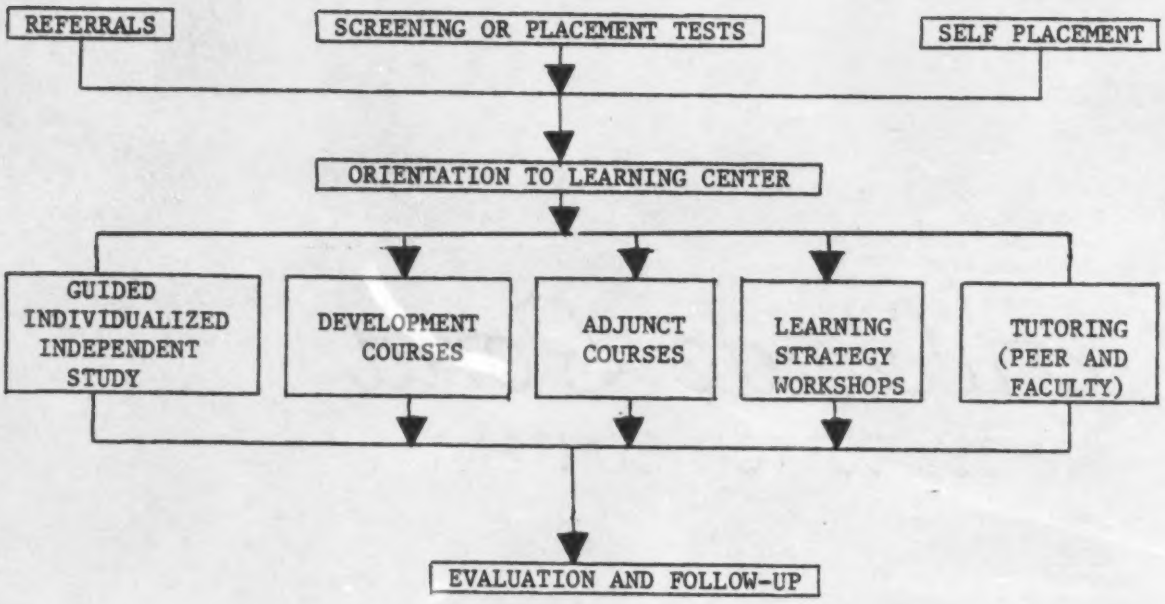


Figure 3. Operational Structure: Community College Learning Centers



In addition to or as an alternative to semester developmental courses in math, reading, and study skills, students may improve skills through supplemental or adjunct courses for academic support in a specific discipline for a particular course. Supplemental courses are taught by learning center faculty in close cooperation with the instruction in a specific course. Such interaction is beneficial in courses such as accounting, chemistry, and biology in which students need continuing semester-long instruction paralleling classroom topics in order to master the context. Learning skills workshops are recommended for brush-up or refresher purposes. Tutoring, both peer and faculty, and individualized independent study under the guidance of learning center faculty may also be recommended.

Individualized, independent study may be planned at any point in the semester for students referred by instructors or themselves to develop specific strategies for specific course demands. The study plan should be developed by the learning center instructor, and the student should be monitored by the center faculty member who follows up and provides assistance, encouragement, and adjustment as needed. For example, an algebra student may need a review of quadratic equations.

Peer and faculty tutoring is available either in scheduled groups or at the request of students or instructors. Drop-in tutoring is available also.

Learning strategy workshops are announced and offered at scheduled times on time management, test-taking, study techniques, term-paper writing, metrics, basic in grammar, etc.

Finally, counseling, both personal and career, should be available to students through the institution. Many students who lack the confidence and skills to meet college demands can benefit personally and academically from counseling. Most of these students cannot be retained in the college without the benefit of counseling.

Individualized Instruction as the Key

Individualized instruction is, perhaps, the key to either of the previously discussed learning center models, as it is the key to learning centers in many schools, The philosophies refer to "individually prescribed," "self-paced," as well as specifically "individualized instruction."

Individualized instruction generally refers to an educational scheme or plan which differentiates instruction according to individual differences in pupils. Instructional materials are organized in some manner so as to allow each student to progress according to his or her own ability.

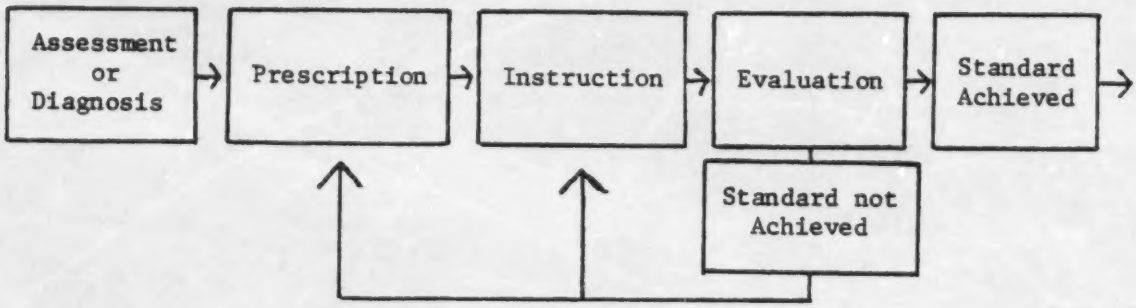
Individualized instruction is not new. One student at the feet of Socrates was receiving individualized instruction. Children being taught by their mothers at home in the pioneer cabin were receiving individualized instruction. The nature of tutoring is to provide individualized instruction. However, when 100 students need remedial help in reading and math, all at a different level, and only one or two teachers are available, the one-on-one teacher-pupil ratio becomes inefficient and impossible.

Over the years, educators have developed various kinds of materials to help provide individualized instruction for individual needs. Programmed instruction is an important example of these materials. Programmed instruction provides for students to respond to the material, thus involving the student directly in the learning process. The student becomes an active learner.

Programmed instruction does not, of itself, insure individualized instruction. To become individualized, some method or system of assessing needs of the student and then prescribing appropriate instructional material (e.g., programmed instructional material) to meet those needs must be put into operation.

Any generalized model for individualized instruction would contain a minimum of four basic concepts. Assessment or diagnosis of strengths and weaknesses, prescription of appropriate learning experiences, the actual instruction, and evaluation of the degree of learning are all important steps in the process. These can be expressed in the following model (Figure 4).

Figure 4: Generalized Model for Individualized Instruction



First, the strengths and needs of the learner must be assessed or diagnosed in some manner, centering primarily on a) assessment of the student's background through such means as school records, check sheets, and interviews, and b) testing, using teacher-made tests or standardized tests. Some diagnostic procedures are more specific than others. For instance, the TABE (Tests of Adult Basic Education) is designed in such a way as to assess ability in specific academic skills, such as use of commas, punctuation. In general, diagnosis seeks to assess both the abilities and needs of the learner.

Given a thorough assessment, the next step is to suggest or prescribe appropriate learning experiences based on the results of the assessment and the individual goals of the student. In individualized instruction, this is often accomplished through prescription of programmed instructional materials designed to be completed in small increments. Only materials relating to what is needed are chosen. Through use of effective diagnosis, the teacher

can avoid material which has already been learned.

Given a prescription or list of instructional experiences or materials chosen to meet the student's needs as diagnosed, the teacher then arranges for and oversees the instruction. As mentioned previously, the experiences are often some form of programmed instruction which involves the student in responding to the material. It is self-paced, allowing the student to proceed at his or her own speed. The teacher is available for assistance if needed, but serves primarily as a manager of the learning environment.

Following instruction, the student is evaluated as to how well the material has been learned. If the previously set standard has been achieved, the student moves on to the next stage. If not, the student may recycle through the same material or the teacher may reassess the situation and choose other learning experiences to meet the same goal. These options are depicted in Figure 4 through feedback loops when the standard has not been achieved.

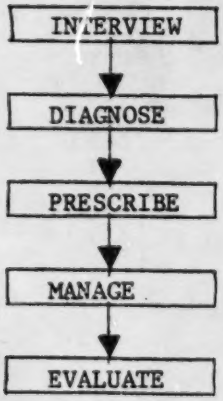
Individualized Manpower Training System

Students enter vocational programs at many levels of ability. Some have severe reading, math, or language deficiencies. Others may simply need a bit of math brush-up to meet standards for pre-engineering. Still others may need help in reading the terminology in a specific field such as medical technology.

Learning center coordinators have found individualized instruction to be an essential tool in helping these students meet a variety of needs. Through individualized instruction the needs of each student are met in a different way. However, the meeting of these needs--the diagnosis and prescription of appropriate learning experiences—becomes very complex. In an effort to simplify and standardize some of the procedures involved in delivering individualized instruction, various systems have been developed.

One such system, for delivery of individualized instruction which includes the essential elements is the Individualized Manpower Training System (IMTS). In operation in many states, the IMTS is especially visible in Florida. The Division of Vocational Education, Florida State Department of Education, in conjunction with the University of West Florida, has installed IMTS in learning centers throughout Florida. Extensive materials have been developed, and regular training workshops are held for learning center staff. This in-place system can be used to illustrate how individualized instruction can be managed effectively.

The IMTS provides for individual student needs in five basic steps. The progressive nature of these steps can be expressed in the following model:



The following paragraphs provide an abbreviated description of each step.

Interview

The student enters the learning center by several methods: referral, walk-in, etc. The first step is for the coordinator to interview the student, complete an IMTS Personal Data Form, and, with the student, determine student goals for improvement.

Diagnose

The Test of Adult Basic Education (TABE) is administered to each student. Information from the test is recorded on a Modular Analysis of Learning Difficulties (MALD). This provides detailed information as to the strengths and weaknesses of the student.

Prescribe

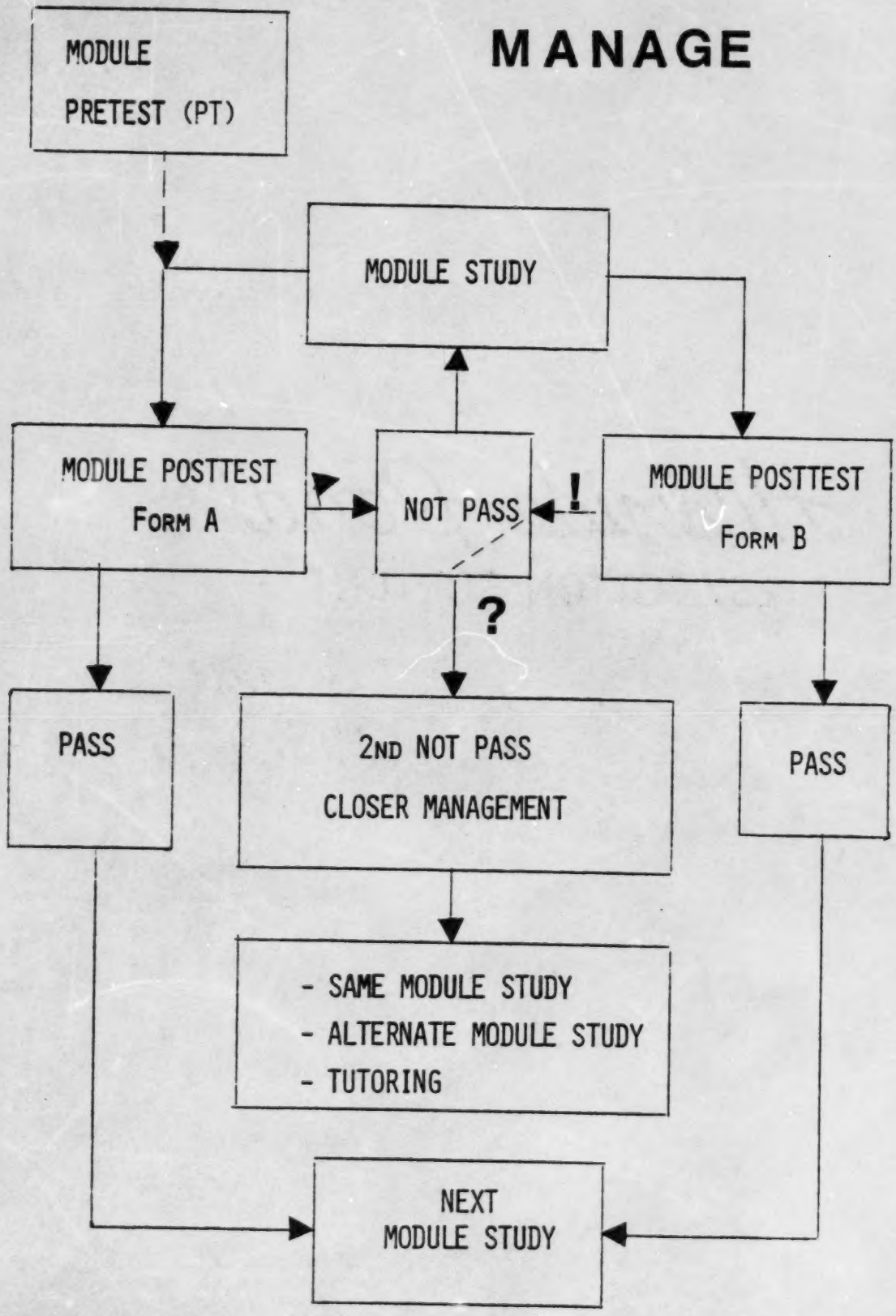
Using the test data, and referring to detailed prescribing catalogs, appropriate modules are selected or prescribed to remedy each learning difficulty. An individual list or prescription is written for each student.

Manage

Modules are studied with students checking their own prescriptions and getting their own material. Much of the management is the student's responsibility. The coordinator is available for assistance whenever needed, but is a manager of environment and behavior more than a teacher of subject matter. Management includes post-testing after each module. The student is shown the results immediately for instant feedback. If the pre-determined standard is achieved, the student moves on to the next module. If not, the student may recycle through the same material, work through additional study sheets, or, with the coordinator, reassess the prescription.

Evaluate

After completing all of the prescribed modules the student takes an alternate form of the TABE as a post-test evaluation. The analyzed results are used in evaluating whether or not the student's original educational goals have been met, if the goals have been achieved, studies in the learning center are complete. If not, a new prescription is constructed and the student continues.



FROM: The Florida IMTS Model

Year Two

Handbook Production

A total of eight inservice sessions were held with the learning center coordinators during the second year of the project. These included meetings at the Northern Kentucky Vocational School, Jefferson Community College, Western Kentucky State Vocational School and the Lexington Technical Institute.

During these sessions the coordinators exchanged materials, ideas, and worked to develop sections of the Learning Center Handbook.

On June 11, 1981, the coordinators met to review and revise the final draft of the handbook. After their final editing was accomplished, copies of the Handbook were printed for distribution at the Special Vocational Education Teacher's Conference in Richmond, Kentucky on August 4, 1981.

Student Assessment

During the course of the year, the learning center coordinators kept records on the students who had participated in the learning center. An assessment of student needs was accomplished based on the results of their Student Report Forms. All students using the learning center were listed on the form along with the following information: pre/post test scores from the TABE, prescribing of materials--language, reading, or math, the related voc-ed program, and the amount of time spent in the learning center.

It was found that the average number of students enrolled in the Cooperating Learning Centers throughout the year was 187, with the majority of the students (64) enrolled in Business and Office courses, 48 enrolled in Welding and 41 enrolled in the LPN program.

Most of the deficiencies of the students tested were in the area of Math, with minimum competencies of 5.0 (grade level) on the TABE pre-tests. The largest number of prescriptions were developed for math, followed by

reading, then language. Many students needed developmental assistance in all three areas--language, math and reading, with pre-test scores three and four levels below grade placement. However, the average amount of time in hours spent in the learning center was just under 20, with the extreme being one student who spent nearly 200 hours in the center during the school year.

In most cases post-tests were not administered, as students begin a prescription but discontinue when they feel they have received the necessary skills or exit from their vocational program. This was found to be a discrepancy from the operating model, which calls for an entry assessment and post assessment in order to measure progress. Cooperation is needed from administration, counselors and shop teachers to encourage students to remain in their program, vocational as well as developmental, until mastery is achieved.

Allocation of Time

Based on an analyses of the data gathered during the first year of the project, it was hypothesized that the learning centers were not operating in accordance with the prescribed model--particularly in the area of individualized instruction. In an effort to identify the discrepancies between actual and proposed operation, a Time Usage Form was developed (Appendix C). Each coordinator's allocation of time across various center duties was sampled throughout the year. Each time sample was one week in duration and the completed forms were returned for analysis. Each coordinator completed four time samples which were included in the analysis.

The Time Usage Forms consisted of fifteen itemized duties that occur as duties of the learning center coordinators. A few of the duties listed were: Student Interviews, Student Assessment, Writing/Planning Student

Prescriptions, GED Testing, Tutoring, Small Group Instruction, Counseling, Meetings, and other areas.

The coordinators were to record the amount of time they spent on each duty for each day of the designated week. The hours were then totaled by the week by the coordinator and sent to the project coordinator; percentages of time spent on the various activities were determined based on the total number of hours worked in the week.

The resulting tally indicated that the highest percentage of time was spent on small group instruction (30-40%) and 25-30 percent of their time was spent on tutoring. GED testing consumed another significant portion of time, accounting for 20 percent of the week. Less than 15 percent of the coordinator's time was spent on the combined activities of orienting students, making student assessments, and writing/planning prescriptions. Required reports and budget/finance accounted for approximately another 15 percent.

These results are not consistent with the model prescribed in the prepared handbook as it states that individualized instruction should be implemented in the learning center. If this system is utilized, then the majority of the coordinator's time should be spent interviewing students, assessing student needs, and writing and managing student prescriptions.

GED testing also consumed a large amount of the coordinator's time and the learning center was typically closed during testing. According to the model described in the handbook, learning centers should only be used for GED testing if supplemental resources are provided, by the community or the state.

The major goal of the learning center is instruction on individual student needs. Closing down instruction 20 percent of the time for GED

testing is not consistent with the purpose of the learning center. If the learning center is to function as a testing center, arrangements should be made to provide a testing area and a parttime staff person to monitor the testing.

CHAPTER 3

SUMMARY AND RECOMMENDATIONS

Summary

The previous sections of this report include a brief summary of the learning center movement, especially focusing on individualized instruction. Also included was the structure of basic models for learning centers in secondary/post-secondary schools and in community colleges. Both models were described in terms of "what should be" for philosophy and operational structure.

The philosophies of the models express similar beliefs. Both express the belief that learning centers should concentrate on providing academic assistance to students in an individualized, self-paced manner. Instruction should be presented in a relaxed, encouraging, non-threatening atmosphere. The community college philosophy also expressed a belief in the use of small group instruction for their particular purposes, but both models stressed individualized instruction as a means of effectively meeting the varying academic needs of individual students. The essential elements of individualized instruction include diagnosis, prescription, instruction, and evaluation. Both models allow for the operation of these elements in their structure.

During the second year of the project, it was found that the learning centers were not operating in a manner congruent with the proposed models. Students were not consistently provided with a diagnosis, followed by prescription, instruction, and evaluation. Rather, the pattern was some diagnosis, followed by assignment in educational materials. However, such assignment/instruction was not typically a part of a planned educational

prescription. Also, instruction was most often in small groups or was tutoring. Students generally exited from the learning center prior to evaluation. Posttests were usually not given. Since there is great difficulty encountered in obtaining posttest data,, other evaluation mechanisms should be investigated, e.g., personal interviews, rating sheets, individual-personal assessment and reporting. These could be ongoing evaluations accomplished while the student is attending the center.

If the above observations appear to be only criticism, they are not meant to be. It was not expected that the centers would be operating according to the proposed model. The discrepancies were identified in an effort to bring attention to the areas of operation most needing study for possible change in emphasis. The center coordinators are to be commended for their efforts, both in terms of their day-to-day activities and for their assistance on this project, (the latter being evidence of their willingness and desire to work toward program improvement.) Further investigation revealed that there had not been an organized training program held for new learning center coordinators. This is to be expected, since no model has been prescribed for learning center operation. Such training should be organized.

A final summary statement relates to the facilities which are available to the learning center coordinators. Not in all, but in most cases, the facilities were found to be wanting. In only the newest schools was the learning center space allocations planned in relation to program needs. In the older schools, "an available room" was often designated for the learning center. Again, this is not meant to be an inditement, rather an observation. As new facilities are planned, it is imperative that the needs of the learning center are considered to be as important as the needs of any other program area.

Recommendations

Based on the results of the two years of project operation, the following recommendations are proposed.

1. New methods, equipment, and instructional materials continue to be developed each year. A mechanism for coordinating the evaluation of these should be devised. Additionally, inservice education activities are recommended as a means of assisting the learning centers. One possibility would be to provide funding at a teacher education institution for purposes of coordinating learning center improvement on a continuous basis. This procedure has been used quite effectively in Florida through a grant to the University of West Florida. Through this grant, new materials are reviewed and inservice programs provided.
2. Analysis of data gathered in this project revealed a wide variety of operating styles among the various learning centers. While complete standardization is neither desired or even practical, consideration should be given to taking formal action at the state level to insure that each center is operating according to stated objectives and procedures. As with number one above, this will require training and coordination.
3. Although individualized programming is recognized as the primary method of instruction, little evidence exists to support that this practice occurs. Individualized instruction based on assessment and prescription needs to be stressed as the

method to be used in the learning centers. To this end, it is recommended that the coordinators and the state personnel look at the Florida Individualized Manpower Training System as an organizing mechanism around which to develop Kentucky's learning centers. The Florida IMTS is well organized around a system of diagnosis and prescription with detailed materials already developed. The system has a track record of success in learning centers similar to Kentucky's.

4. Student evaluation data were typically not collected at exit. Such data could be collected only for students who completed their learning center activities while still in a vocational program. Most exits were abrupt and even in cases when learning center instruction terminated with program completion at the end of a year, additional instructional time was considered more important than the time required for testing. Since this difficulty exists, other evaluation mechanisms should be investigated, e.g., personal interview, rating sheets, or individual-personal assessment and reporting attached to each learning activity. These could be ongoing evaluations accomplished while the student is attending the center.
5. A Learning Center Handbook was developed as a result of this project and appears as an appendix to this report. It is recommended this handbook be disseminated statewide and that regional inservice meetings be scheduled regarding its use. Additionally, the handbook needs to be periodically updated and revised.

6. Time appeared to be a real problem for the coordinators. One reason was because they spend considerable time in small group instruction and in individual tutoring. Another reason was that the centers were heavily involved with GED instruction and testing. Some centers even shut down as much as 20 percent of the week for the purpose of GED testing. If additional personnel are not provided, it is questionable whether such a procedure is in congruence with the intent of a learning center operation. Therefore, consideration should be given specifying learning center functions and the resources allocated to ea function.
7. The space allocated to the learning center was generally not designed for that instructional purpose. As new facilities are constructed or existing ones renovated, consideration should be given to the proper design of new centers which meet educational specifications developed for that program.

Implementation of these recommendations, it is felt, will be a positive step in improving the effectiveness of learning centers in Kentucky's vocational schools and community colleges.

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APPENDIX A

PARTICIPATING LEARNING CENTER COORDINATORS

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APPENDIX B

DO'S AND DON'TS FOR LEARNING CENTER COORDINATORS

(As proposed by cooperating Learning Center Coordinators)

APPENDIX B

DO'S AND DON'TS FOR LEARNING CENTER COORDINATORS

The following list of Do's and Don'ts emerged as a result of discussion by participating learning center coordinators concerning the function of learning center operation.

DO assess all students.

DO prescribe when appropriate.

DO provide non-threatening environment.

DO make participation voluntary.

DO use student input in prescriptions (involve students in development of their prescriptions).

DO use faculty and staff input in resource and program planning.

DO develop good public relations and orientation for faculty and staff.

DO make sure students experience early success.

DO be honest with students at all times.

DO provide progress reports for students and faculty.

DO encourage faculty and student tours of learning centers.

DO keep the Learning Center in the mainstream.

DO assist students in goal clarification, self-assessment and self-concept.

DO have understanding of referral resources.

DO keep test results confidential.

DO keep adequate records and reports, and up-to-date folders.

DO maintain student dignity.

DO provide environment of mutual confidence.

DO encourage student responsibility for success.

DO relate their studies to their training course.

Do treat students as adults (including using appropriate high interest materials).

DO encourage responsible behavior in the learning center.

DO establish priorities for scheduling students.

DO be flexible in the choice of materials used.

DO encourage continued development of student beyond the primary goals.

DO work out student's time schedule with vocational instructor.

DO provide visibility for the learning center by spending time in other classes.

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DON'T serve as a GED testing center.

DON'T serve as a substitute teacher.

DON'T give grades.

DON'T lead students and faculty to expect 100% success.

DON'T be authoritarian.

DON'T be judgmental.

DON'T overbuy equipment.

DON'T overkill.

APPENDIX C

TIME USAGE FORM

(Learning Center Coordinator) Month

Week of

USAGE OF TIME	M	T	W	R	F	Total
1. Student Interviews (entry/orientation)						
2. Student Assessment						
3. Writing/Planning Student Perscriptions						
4. GED testing						
administering						
grading						
5. Student records						
6. Required Reports (Regional, state, etc.)						
7. Budget/Finance (ordering materials, etc.)						
8. Planning						
organizing daily activities						
organizing classes (for those who teach classes)						
9. Tutoring						
10. Small group instruction						
11. Advising						
clubs						
individuals (non-counseling)						
12. Counseling						
13. Substituting						
14. Meetings						
with instructors (individually)						
staff (school staff, total)						
advisory committee						
15. Other areas: (Specify)						
Total						

Comments: (Continue on back)

APPENDIX D

LEARNING CENTER HANDBOOK
(CE031731)